Lat 40.11621 Lon -121.66249

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

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REPLY TO: 3430 FIDM Evaluation

June 19, 1979

SUBJECT: Polk Springs Biological Evaluation Update (Rare II, Area No. 5097)

TO: Forest Supervisor, Lassen NF 9200

On Wednesday, June 13, 1979 Mike Srago, Pathologist and Bruce Roettgering, Entomologist, FIDM Staff, and Norm Pettigrew, Salvage Sales Office, Almanor District made an evaluation of the current status and predicted trend in tree mortality in the Polk Springs area (Rare II, Area No. 5097).

Evaluation

Using vantage points along the eastern edge of Deer Creek drainage, observations were made of the relative numbers of older dead trees (faded in spring and summer of 1978), recently dead trees (faded in fall and winter of 1978) and current dead trees (fading in spring of 1979). These observations showed that the level of tree mortality (ponderosa pine, sugar pine and Douglas-fir) was high in the spring and summer of 1978 and that this mortality frequently occurred as large groups of trees. The level of mortality dropped by fall of 1978 with the dead trees occurring in smaller groups and as individuals. A further drop in the number of dying trees is apparent this spring with only scattered individual fading trees visible. The complete picture of total spring mortality, however, is likely only to be apparent in mid-July as tree fading continues.

This drop in tree mortality can be associated with the continuing recovery of vigor by the trees and forest from the prolonged and severe drought of 1975-1977. The winter and spring rains of 1978 were well above normal; precipitation during the same period in 1979 was near normal. Subjective measures of the recovery of vigor readily apparent now are the excellent 1978 needle length and 1979 internodal growth on all species of conifers. In both cases -- needle and internodal -- this growth is from two to four times greater than that of 1977.

No western pine beetle infested ponderosa pine were found; but two trees showing good evidence of having successfully pitched out attacking beetles were seen. A few green Douglas-fir with declining crowns were found to have patch and/or strip attacks by the fir flatheaded borer. Quite likely the beetles will remain active in trees like these, causing further decline and, ultimately, death. A few sugar pine with well-faded foliage were checked. While some mountain pine beetle and California flatheaded borer broods were present, the numerous round and oval exit holes in the bark indicated that substantial emergence had already taken place. Woodpecker activity in all species of trees judged to have harbored overwintering beetle broods was rated as moderate to heavy.

The wood in the recent and older dead trees still is quite sound with only minimal deterioration due to decay, wood destroying insects and weather checking.

Discussion

It appears that the peak of tree mortality in the Polk Springs area was reached in the spring and summer of 1978. All indications now are that the forest is recovering from the drought -- the principal underlying cause for the excessive tree death -- and that tree mortality there will continue to drop in 1979. It should not be expected that tree mortality will stop completely, however. Most of the sites supporting trees at Polk Springs are marginal; many of these sites are overstocked; and at least one debilitating disease -- dwarf mistletoes in ponderosa pine -- is present. Given these conditions, bark beetles and various other cambium dwelling insects can be expected to exploit opportunities for breeding in and, consequently, killing trees.

It is apparent that the drought and subsequent pest-associated tree mortality has severely altered the nature of the Polk Springs Area from its 1975 or pre-drought character. While deferring salvage (recovery of dead and dying trees) will not pose a bark beetle threat to the adjoining unconstrained areas, the magnitude of the existing mortality is such that considerable timber value will be lost unless recovered by the end of this operating season. Left unsalvaged, the massive build-up in fuel load could pose an immediate and long term threat to the commercial timber stands, Private and Forest Service, adjacent to the roadless area.

If salvage logging is carried out in the Polk Springs Area, some additional short-term damage associated with the operations is to be expected. However, that damage may be minimized if helicopters are used to do the yarding.

If you have any questions concerning this evaluation or if we can be of any further assistance please contact me at (415) 556-6520.

Wilfred L. Freeman Jr.

WILFRED L. FREEMAN, JR., Director
Forest Insect and Disease Management